REMARKS

Pending Claims:

In this application, claims 22-23 and 30 are currently pending. Entry of amendments to these is respectfully requested to advance prosecution of the case. Most limitations are now present in claims 22 and 23 and so the applicant has addressed all the issues presented by the Examiner in his rejections of the original claims.

Rejection under 35 U.S.C. §112 (paragraph 1)

Claims 26 and 27 are rejected as not supported by the specification as filed. Kindly refer to p5 at lines 18 and note that the helix angle is expressed as having a value in the range of values from 45 to 80 degrees. This is support for a fixed pitch. Note that on page 5 at line 30-33 the "pitch" is allowed to vary because the spacing between ribs varies. This is support for the variable pitch limitation. These limitations are presented in amended claims 22-23.

Rejection under 35 U.S.C. §112 (paragraph 2)

Claims 22-23 25 and 27 are rejected for lack or positive antecedent basis. Claims 22 and 23 have been corrected to conform to the Examiners requirement.

Rejection under 35 U.S.C. §102(b)

The Examiner has rejected claims 22-30 as being anticipated by Brockhoff '212 under section 102(e). In that case a petition has been filed to change inventorship consequently the reference is not "by another" as required by the statutory section.

Rejection under 35 U.S.C. §103

The Examiner has rejected claims 22-24 and 26 as being unpatentable over GB '166. The claims describing the applicant's invention require that the channel have a varying and decreasing cross sectional area. Kindly note that the British device have channels of constant cross section area but varying radius as measured from the centerline.

Rejection under 35 U.S.C. §103

The Examiner has rejected claims 25 and 28-29 as being unpatentable over GB '166 in view of JP '341. The Japanese reference seems to teach constant pitch and cross section area in a different context than blood conditioning. The British reference has constant pitch and constant radius as stated above. No modification of the British device would be inspired by the teaching of the Japanese reference. The tow teaching are the same with respect tot he important part of the separation concept..

CONCLUSION

All of the claims remaining in this application should now be seen to be in condition for allowance. The prompt issuance of a notice to that effect is solicited.

Respectfully submitted,
CONVERGENZA
AKTIENGESELLSCHAFT
By its attorneys:

Date: 9/23/02

Robert C. Beck

Robert C. Beck
Registration No. 28,184
Beck & Tysver, P.L.L.C.
2900 Thomas Ave., #100
Minneapolis, MN 55416
Telephone: (612) 915-9635
Fax: (612) 915-9637

RECEIVED
OCT 04 2002
TC 1700

VERSION SHOWING CHANGES

22.A device for extracting gas bubbles from blood comprising:

a housing having an input channel and an outlet channel;

said input channel and said outlet channel being concentric along a housing axis;

a chamber section coupled to said ~~inlet~~input channel and located after said ~~inlet channel;~~input channel, said chamber section having a chamber interior wall;

an eddy chamber coupled to said chamber section and located after said chamber section;

an outlet channel coupled to said eddy chamber and located after said eddy chamber;

an insert body located in said chamber section and extending into said eddy chamber;

at least one rib extending between said insert body and said chamber section interior wall , forming a helical groove in said chamber section and not extending into said eddy chamber;

said helical groove having constant cross sectional area but variable pitch along its length;

a gas outlet located along said axis in said eddy chamber;

whereby blood containing gas bubbles entering said input channel are directed into said chamber section where said helical groove accelerates said blood and causes it to enter said eddy ~~chamber on a tangent with a tangential velocity~~chamber.

23.A device for extracting gas bubbles from blood comprising:

a housing having an input channel and an outlet channel;

said input channel and said outlet channel being concentric along a housing axis;

a chamber section coupled to said ~~inlet~~input channel and located after said ~~inlet channel;~~input channel, said chamber section having a chamber interior wall

an eddy chamber coupled to said chamber section and located after said chamber section;

an outlet channel coupled to said eddy chamber and located after said eddy chamber;

an insert body located in said chamber section and extending into said eddy chamber;

at least one rib extending between said insert body and said chamber section interior wall-, forming a helical groove in said chamber section and not extending into said eddy chamber;

said helical groove having variable cross sectional area but constant pitch along its length;

a gas outlet located along said axis in said outlet channel;

whereby blood containing gas bubbles entering said input channel are directed into said chamber section where said helical groove accelerates said blood and causes it to enter said eddy chamber ~~on a tangent with a tangential velocity~~.

~~24. The device of claim 22 wherein said helical groove has a constant cross sectional area.~~

~~25. The device of claim 23 wherein said helical groove has a cross sectional area that decreases from said input toward said outlet channel.~~

~~26. The device of claim 22 wherein said rib has a fixed pitch and said helical groove has a constant cross sectional area.~~

~~27. The device of claim 23 wherein said rib has a variable pitch along the length of said chamber section and said helical groove has a cross sectional area that decreases from said input toward said outlet channel.~~

~~28. The device of claim 22 wherein said eddy chamber has a cross sectional area that gradually increases toward said gas outlet.~~

~~29. The device of claim 23 wherein said eddy chamber has a cross sectional area that gradually increases toward said gas outlet.~~

30. A method of removing gas bubbles from blood comprising the steps of:

introducing blood into a helical groove where it is accelerated both axially and radially forming an accelerated blood flow ;

introducing said accelerated blood flow into an eddy chamber along a tangent, where said blood is allowed to continue to turn while decelerating;

extracting a portion of said blood flow from a location near the central axis of flow.